



US Army Corps
of Engineers

Missouri River Bank Stabilization and Navigation Project, Fish and Wildlife Mitigation Project



View of the new side channel constructed at the mitigation site located at the Deroin Bend Conservation Area, Atchison and Holt Counties, Missouri

**Annual Implementation Report
January 2003**

TABLE OF CONTENTS

page

TABLE OF CONTENTS	iii
LIST OF TABLES	v
INTRODUCTION	1
Authority	1
Background	1
Report Purpose and Format.....	3
PAST MITIGATION EFFORTS, FY02 AND PRIOR.....	4
Funding.....	4
Real Estate.....	5
Habitat Development.....	15
Operation and Maintenance.....	27
Monitoring and Evaluation.....	31
CURRENT MITIGATION EFFORTS, FY03.	33
Funding.....	33
Real Estate.....	34
Habitat Development.....	35
Supplemental Environmental Impact Statement	37
Operation and Maintenance.....	37
Monitoring and Evaluation.....	38
FUTURE MITIGATION EFFORTS, FY04 TO COMPLETION.....	39
Funding.....	39
Real Estate.....	39
Habitat Development.....	39
Operation and Maintenance.....	40
Monitoring and Evaluation.....	40
APPENDIX 1, SITE LOCATION MAPS.....	41

LIST OF TABLES

TABLE 1. BREAKDOWN OF TOTAL COSTS TO DATE (AS OF 30 SEP 01).....	4
TABLE 2. ACQUISITION OF NON-PUBLIC LANDS, TOTAL AUTHORIZED BY WRDA 86	5
TABLE 3. ACQUISITION OF NON-PUBLIC LANDS, TOTAL ACQUIRED BY STATE (AS OF 30 SEP 02)	6
TABLE 4. ACQUISITION OF NON-PUBLIC LANDS, TOTAL ACQUIRED WITHIN THE STATE OF MISSOURI (AS OF 30 SEP 02).....	7
TABLE 5. ACQUISITION OF NON-PUBLIC LANDS, TOTAL ACQUIRED WITHIN THE STATE OF KANSAS (AS OF 30 SEP 02).....	8
TABLE 6. ACQUISITION OF NON-PUBLIC LANDS, TOTAL ACQUIRED WITHIN THE STATE OF IOWA (AS OF 30 SEP 02)	8
TABLE 7. ACQUISITION OF NON-PUBLIC LANDS, TOTAL ACQUIRED WITHIN THE STATE OF NEBRASKA (AS OF 30 SEP 02)	9
TABLE 8. EXISTING PUBLIC LANDS, TOTAL AUTHORIZED TO BE RESTORED/ DEVELOPED UNDER WRDA 86	10
TABLE 9. EXISTING PUBLIC LANDS, TOTAL EASEMENTS/LICENSES ACQUIRED BY STATE (AS OF 30 SEP 02)	11
TABLE 10. EXISTING PUBLIC LANDS, TOTAL EASEMENTS/LICENSES ACQUIRED WITHIN THE STATE OF MISSOURI (AS OF 30 SEP 02)	12
TABLE 11. EXISTING PUBLIC LANDS, TOTAL EASEMENTS/LICENSES ACQUIRED WITHIN THE STATE OF IOWA (AS OF 30 SEP 02).....	13
TABLE 12. EXISTING PUBLIC LANDS, TOTAL EASEMENTS/LICENSES ACQUIRED WITHIN THE STATE OF NEBRASKA (AS OF 30 SEP 02).....	13
TABLE 13. ACQUISITION OF ALL LANDS, TOTAL AUTHORIZED BY WRDA 99.....	14
TABLE 14. HABITAT TYPES DEVELOPED BY SITE (AS OF 30 SEP 02)	16
TABLE 15. STATUS OF OPERATION AND MAINTENANCE FOR MITIGATION SITES (FY 02 AND PRIOR)	28
TABLE 17. BREAKDOWN OF ESTIMATED FUNDING FOR FY03	33

INTRODUCTION

AUTHORITY

This report presents the current status and future plans for implementation of the Missouri River Fish and Wildlife Mitigation Project, Iowa, Nebraska, Kansas, and Missouri, hereinafter referred to as the “Project”. Congress first authorized construction of the Project in Section 601(a) of the Water Resources Development Act of 1986 (Public Law 99-662). The authorization included acquisition and development of 29,000 acres of land, and habitat development on an additional 18,200 acres of existing public land in the States of Iowa, Nebraska, Kansas and Missouri. The total amount of land authorized for mitigation was 48,100 acres.

In 1999, Congress passed another WRDA bill. Section 334(a) of the Water Resources Development Act of 1999 included modifying the Project by increasing the amount of acreage to be acquired and/or restored by 118,650 acres. Thus the new total amount of land authorized for mitigation is currently 166,750 acres.

BACKGROUND

The original authorization for the Project was based upon a report of the US Army Corps of Engineers, Chief of Engineers, dated April 24, 1984, entitled Missouri River Bank Stabilization and Navigation Project Final Feasibility Report and Final EIS for the Fish and Wildlife Mitigation Plan. The authority to prepare the Feasibility Report was the 1958 Fish and Wildlife Coordination Act (P.L. 85-624). The Final Feasibility Report described the fish and wildlife and habitat losses that have, and will, occur due to the Missouri River Bank Stabilization and Navigation Project. Also described in the Report are various measures to mitigate for these losses and a recommended plan to restore, preserve, or develop 48,100 acres of habitat.

This project is 100 percent Federally funded for real estate, design, construction, and operation and maintenance. However, even though there is not a cost share sponsor, Federal and State fish and wildlife agencies participate in the implementation of the Project. The agency participation is primarily through an Agency Coordination Team that was developed to formulate and decide upon the various acquisition sites and appropriate development plans for the sites. Participants include the Iowa Department of Natural Resources, the Nebraska Game and Parks Commission, the Kansas Department of Wildlife and Parks, the Missouri Department of Conservation, the Environmental Protection Agency, and the U.S. Fish and Wildlife Service.

Approximately 60 percent of the original project is within the Kansas City District (CENWK) and 40 percent within the Omaha District (CENWO). For ease of dealing with the affected states, CENWK is working on sites in Missouri and Kansas, while CENWO is responsible for all Nebraska and Iowa sites.

Preconstruction Engineering and Design (PED) for the Project was initiated in December 1989. As a part of PED work, a "Reaffirmation Report" for implementation of the Project was completed. The Reaffirmation Report was approved by the Corps of Engineers' Missouri River Division in August, 1990. The purpose of the Reaffirmation Report was to confirm that the plan recommended in the 1984 Feasibility Report and Final EIS was still viable. PED was completed in September 1991 and this Project has been in a "Construction" status since that time. The Reaffirmation Report explains the various aspects of the Project such as the approval process, funding levels, costs, schedules, documentation and involvement of other State and Federal agencies. In accordance with the Reaffirmation Report, Annual Implementation Plans are required to be created.

A "Real Estate Design Memorandum No. 1" for land acquisition activities for the Project was completed by the Kansas City District in March 1990. This report was endorsed by the Corps of Engineers' Missouri River Division in July 1990, and approved by Corps of Engineers' Headquarters in May 1991. This report established the real estate requirements for the acquisition in fee or easement of 29,900 acres of privately owned lands and for any real estate requirements for development of 18,200 acres of existing public lands within the four affected States.

WRDA 99 expanded the amount of acres authorized for the project from 48,100 acres to a new total of 166,750 acres. This is a significant change to the project and an update to the original EIS was required. In August 2001, the Corps of Engineers began to prepare a Supplemental Environmental Impact Statement (SEIS). The draft SEIS was published in September 2002. The Final SEIS is currently being prepared.

The Corps of Engineers worked with the Agency Coordination Team to develop a cost estimate to implement the additional acres authorized by WRDA99. In December 2001, the Corps completed a document titled "Missouri River Mitigation Project, Missouri, Kansas, Iowa, and Nebraska, Report to Congress, in Compliance with the Water Resources Development Act of 1999". This document presented a cost range of modified Project of from \$740 million (includes development of 7,000 acres of shallow water habitat) to \$1.33 billion (includes development of 20,000 acres of shallow water habitat).

In November 2000, the US Fish and Wildlife Service issued a Biological Opinion (Bi-Op) to the Corps of Engineers for impacts to the pallid sturgeon by construction and operation of the Bank Stabilization and Navigation Project. The Bi-Op stated that the Corps had severely altered, and continue to alter, the natural hydrology and shallow water habitat on the Missouri River within the Project area. The Bi-Op stated that the Corps has to perform "Reasonable and Prudent

Alternative” actions to restore, enhance and conserve shallow water habitat in the amount of 20-30 acres per mile for the 735 mile Project area.

In September 2002, the Corps drafted “Supplement No. 1 to Real Estate Design Memorandum No. 1”. This update included the new acres of the expanded mitigation program. This document stated that the acquisition of additional lands for the project will not reflect a defined amount to be acquired between public or private acres. Also, this document assumed that the additional acres will be equally proportioned by state based on the amount of riverbank miles.

REPORT PURPOSE AND FORMAT

Programmatic updates of the Reaffirmation Report are accomplished through Annual Implementation Reports. This document is the ninth such report. The purpose of the Annual Implementation Reports is to create an administrative record of mitigation efforts that have already occurred, complete a status of the mitigation efforts that are underway, and outline a plan for continued mitigation in the future.

This report is divided into three main parts: Past Mitigation Efforts for FY02 and Prior, Current Mitigation Efforts, FY03, and Future Mitigation Efforts FY04 to Completion. Within these three main parts, the four main elements of the Project (Real Estate, Habitat Development, Operation and Maintenance, and Monitoring and Evaluation) are detailed. Thus, this report is a programmatic effort to explain the past activities, current status, and future activities for the entire mitigation effort for both the Omaha and Kansas City Districts.

**PAST MITIGATION EFFORTS
FOR FY02 AND PRIOR**

FUNDING (FY02 and Prior)

As of 30 Sep 02, the only funds budgeted for this project were based upon the WRDA86 authorized 48,100 acres. It is required that the proper NEPA documentation be completed prior to budgeting for and requesting funds on the modified project. Therefore, the funding amounts for FY02 and Prior were provided for the original authorized WRDA86 project only.

The original WRDA86 authorized project divided the funding up into broad categories: Land Acquisition; Planning, Engineering and Design; Habitat Development; Construction Management; and O&M During Construction costs. Funds for Monitoring and Evaluation were considered a minor part of the project and were therefore provided under Design and Construction Management categories. Construction, General funds began to be provided in Fiscal Year 1992. From FY92 through FY02, the Corps has spent a total amount of \$73,039,000 on the mitigation efforts. Table 1 gives a breakdown of costs expended by category.

**TABLE 1
BREAKDOWN OF TOTAL COSTS TO DATE
(AS OF 30 SEP 02)**

Cost	CENWK (1,000)	CENWO (1,000)	TOTAL (1,000)	% of Total Cost
Land Acquisition	\$19,808	\$12,510	\$32,318	44
Planning, Engineering, and Design	7,554	4,539	12,093	17
Habitat Development	9,656	14,606	24,262	33
Construction Management	1,174	1,630	2,804	4
O&M During Construction	678	884	1,562	2
TOTAL	\$38,870	\$34,169	\$73,039	100

Note: Information in this table is estimated because database is inoperable during FY03 Continuing Resolution Authority funding period.

REAL ESTATE (FY02 and Prior)

Non-Public Lands Authorized by WRDA86.

As stated previously, the original authorized Project allowed for acquisition of 29,900 acres of privately held land. During the Feasibility effort, it was clear that each State had been affected by the Bank Stabilization and Navigation Project (BSNP). Through coordination with the four affected States and the U.S. Fish and Wildlife Service, the 29,900 acres was divided up between the States proportional to the amount of fish and wildlife losses attributed to each State. An additional effort was completed in order to distribute the lands between habitat types. However, now that the project has been underway, shifting of some of the lands between the States to accommodate timing of willing sellers, availability of public lands, etc. was necessary. The current approved plan for the 29,900 acres is indicated in Table 2.

TABLE 2
ACQUISITION OF NON-PUBLIC LANDS
TOTAL AUTHORIZED BY WRDA86

State	Preserve Existing Aquatic Habitat (ac)	Acquire & Develop New Aquatic Habitat (ac)	Acquire & Develop New Terrestrial Habitat (ac)	Total (ac)	Percentage
Missouri	--	1,150	12,050	13,200	44
Kansas	--	100	2,250	2,350	8
Iowa	200	200	6,800	7,200	24
Nebraska	--	250	6,900	7,150	24
TOTAL	200	1,700	28,000	29,900	100

During the public involvement process for the EIS and Feasibility Report for the Project, a policy of obtaining lands only from willing sellers was established. The Corps of Engineers maintains their authority for condemnation, however, it has been agreed that this authority will not be used on the Project so as to minimize the impacts on future acquisitions. Other real estate criteria have been developed to guide the acquisition process to insure the best possible results. These are discussed in detail in the "Real Estate Design Memorandum No. 1."

Working with the Agency Coordination Team, the Corps of Engineers developed a list of priority acquisition sites that have potential for wildlife mitigation. With the priority in hand, the Corps completed a survey of willing sellers near the priority areas. These planning efforts identified sufficient amount of lands to accomplish the original authorized project. As of 30 Sep 02, 25,177 acres of non-public land has been acquired for the Project. This is 84 percent of the 29,900 acres originally authorized. The status of the acquisition of non-public lands as of 30 Sep 02 (FY02 and prior) is displayed in Table 3.

TABLE 3
ACQUISITION OF NON-PUBLIC LANDS
TOTAL ACQUIRED BY STATE
(AS OF 30 SEP 02)

State	Authorized WRDA 86 (ac)	Total Acquired as of 30 Sep 02 (ac)	Percentage of Authorized Amount	Amount Remaining to be Acquired to meet WRDA 86 (ac)
Missouri	13,200	12,741	97	459
Kansas	2,350	2,111	90	239
Iowa	7,200	3,310	46	3,890
Nebraska	7,150	7,015	98	135
TOTAL	29,900	25,177	84	4,723

As of 30 Sep 02, real estate has been acquired from willing sellers at twenty-two locations that were formerly non-public lands. The title for these lands were obtained in fee and the ownership is now held by the Corps of Engineers. Nine of the locations are within the State of Missouri, one is in Kansas, six are in Iowa, and six are in Nebraska. A breakdown by site of the amount of non-public land acquired for mitigation for the States of Missouri, Kansas, Iowa, and Nebraska are given in Tables 4, 5, 6 and 7, respectively. Locations of these sites are given in the Location Maps as a part of Appendix 1.

TABLE 4
ACQUISITION OF NON-PUBLIC LANDS
TOTAL ACQUIRED WITHIN STATE OF MISSOURI
(AS OF 30 SEP 02)

Missouri Sites	Location	Approx. River Mile	Descending Bank	Total Acquired (ac)
Berger Bend	Franklin County	93 – 90	R	414 (1)
Corning	Holt County	518 – 512	L	1,193 (1)
Lower Hamburg Bend	Atchison County	554 – 546	L	2,265 (1)
Nishnabotna	Atchison County	545 – 537	L	1,283 (1)
Overton Bottoms - North	Cooper County	188 – 185	R	1,355
Overton Bottoms - South	Cooper, Moniteau Counties	185 – 178	R	3,662
Rush Bottom Bend	Holt County	502 – 499	L	775 (1)
Tate Island	Callaway County	113 – 110	L	422
Thurnau	Holt County	512 – 508	L	1,372 (1)
TOTAL				12,741

(1) Acquisitions are still underway at this site

TABLE 5

ACQUISITION OF NON-PUBLIC LANDS
TOTAL ACQUIRED WITHIN STATE OF KANSAS
(AS OF 30 SEP 02)

Kansas Sites	Location	Approx. River Mile	Descending Bank	Total Acquired (ac)
Benedictine Bottoms	Atchison County	429 – 424	R	2111
TOTAL				2,111

TABLE 6

ACQUISITION OF NON-PUBLIC LANDS
TOTAL ACQUIRED WITHIN STATE OF IOWA
(AS OF 30 SEP 02)

Iowa Sites	Location	Approx. River Mile	Descending Bank	Total Aquired (ac)
Auldon Bar	Harrison County	580 – 577	L	588 (1)
Blackbird Bend	Monona County	697 - 694	L	223 (1)
Copeland Bend	Fremont County	571 – 565	L	1,092 (1)
Louisville Bend	Monona County	685 – 682	L	84
Noddleman Island	Mills County	587 – 583	L	1,232 (1)
Tieville Bend	Monona County	694 – 692	L	91
TOTAL				3,310

(1) Acquisitions are still underway at this site

TABLE 7
ACQUISITION OF NON-PUBLIC LANDS
TOTAL ACQUIRED WITHIN STATE OF NEBRASKA
(AS OF 30 SEP 02)

Nebraska Sites	Location	Approx. River Mile	Descending Bank	Total Aquired* (ac)
Hamburg Bend	Otoe County	556 – 552	R	1,544 (1)
Kansas Bend	Nemaha County	547 – 544	R	1,056 (1)
Langdon Bend	Nemaha County	532 - 528	R	921 (1)
Middle Decatur Bend	Burt County	689 – 686	L	876
Tieville Bend	Burt County	694 – 692	L	1,014
Tobacco Island	Cass County	589 – 586	R	1,604 (1)
TOTAL				7,015

(1) Acquisitions are still underway at this site

Existing Public Lands Authorized by WRDA86

In addition to the acquisition of mitigation sites on non-public lands, the WRDA86 authorization allowed for restoration and development of mitigation sites on 18,200 acres of existing public land. For habitat development on existing public lands, "no cost" easements are being obtained to allow the Corps of Engineers to construct Project features on land not owned by the Corps.

Through coordination with the four affected States and the U.S. Fish and Wildlife Service, the amount of public land was distributed by State and between habitat types. However, shifting of some of the public lands between the States was necessary to accommodate availability of public lands, etc. The current approved plan for the 18,200 acres of existing public land authorized under WRDA86 is indicated in Table 8.

TABLE 8
EXISTING PUBLIC LANDS
TOTAL AUTHORIZED TO BE RESTORED/DEVELOPED UNDER WRDA 86

State	Preserve Existing Aquatic Habitat (ac)	Acquire & Develop New Aquatic Habitat (ac)	Acquire & Develop New Terrestrial Habitat (ac)	Total (ac)	Percentage
Missouri	0	550	15,200	15,750	87
Kansas	0	0	0	0	0
Iowa	500	200	1,700	2,400	13
Nebraska	0	50	0	50	0
TOTAL	500	800	16,900	18,200	100

Currently, there is a lack of public land within the Project area in the States of Kansas and Nebraska. However, through coordination with the four affected States and the US Fish and Wildlife Service, existing public lands were studied for potential development. A list of priority for mitigation was completed and included into the decisions of funding and scheduling of development.

As of 30 Sep 02, easements and/or licenses have been obtained on 10,855 acres of existing public land for the Project. This is 60 percent of the 18,200 acres originally authorized. The status of obtaining easements and/or licenses on existing public lands as of 30 Sep 02 (FY02 and prior) is displayed in Table 9.

TABLE 9
EXISTING PUBLIC LANDS
TOTAL EASEMENTS/LICENSES ACQUIRED BY STATE
(AS 30 SEP 02)

State	Authorized WRDA 86 (ac)	Total Acquired as of 30 Sep 02 (ac)	Percentage of WRDA86	Amount Remaining to be Acquired to meet WRDA 86 (ac)
Missouri	15,750	7,527	48	8,223
Kansas	0	0	100	0
Iowa	2,400	3,195	187	-795
Nebraska	50	133	266	-83
TOTAL	18,200	10,855	60	7,345

As of 30 Sep 02, existing public land has been acquired through no-cost easements at twenty-one locations along the river. These easements were taken on lands already owned by Federal and State agencies. Fourteen sites are within the State of Missouri, six sites are in Iowa, and one site is in Nebraska. There are no mitigation sites established to date on existing public lands in the State of Kansas. A breakdown by site of the amount of easements taken on existing public land in the States of Missouri, Iowa, and Nebraska are given in Tables 10, 11 and 12, respectively.

TABLE 10
EXISTING PUBLIC LANDS
TOTAL EASEMENTS/LICENSES ACQUIRED WITHIN STATE OF MISSOURI
(AS OF 30 SEP 02)

Missouri Sites	Location	Approx. River Mile	Descending Bank	Total Acquired (ac)
Berger Bend	Franklin County	93 - 90	R	60 (2)
Columbia Bottom	St. Louis County	4 - 0	R	4,108 (1)
Corning	Holt County	518 – 512	L	695 (1,2)
Deroin Bend	Atchison and Holt Counties	520 – 517	L	1,082
Eagle Bluffs	Boone County	174 – 170	L	571
Grand Pass	Saline County	273 – 266	R	5
Marion Bottoms	Cole County	164 – 158	R	0 (4)
Nishnabotna	Atchison County	545 – 537	L	1 (3)
Overton Bottoms - North	Cooper County	188 – 185	R	332
Plowboy Bend	Moniteau County	172 – 169	R	0 (4)
Rocheport Cave	Boone County	183	L	51
Rush Bottom Bend	Holt County	502 – 499	L	37 (4)
Thurnau	Holt County	512 – 508	L	0 (1)
Worthwine Island	Andrew County	460 – 456	L	585
TOTAL				7,527

- (1) Acquisitions are still underway at this site
- (2) Acquisition reflects residual fee on an existing WRP easement that was purchased from a private land owner at this site
- (3) COE purchased 1.34 acre road easement at this site
- (4) Acreage includes lands considered 'Navigational Servitude'

TABLE 11

EXISTING PUBLIC LANDS

TOTAL EASEMENTS/LICENSES ACQUIRED WITHIN STATE OF IOWA

(AS OF 30 SEP 02)

Iowa Sites	Location	Approx. River Mile	Descending Bank	Total Acquired (ac)
Blackbird Bend	Monona County	697 – 694	L	799 (1)
California Bend	Harrison County	652 – 649	L	420
Louisville Bend	Monona County	685 – 682	L	1,012
Middle Decatur Bend	Monona County	689 – 686	L	324
Upper Decatur Bend	Monona County	692 - 689	L	640
Winnebago Bend	Woodbury County	711 - 708	L	0 (2)
TOTAL				4,495

- (1) Acquisitions are still underway at this site
- (2) Winnebago Bend was an existing Corps owned property obtained at no cost to the Project, however funds to develop and maintain habitat have been expended at this site.

TABLE 12

EXISTING PUBLIC LANDS

TOTAL EASEMENTS/LICENSES ACQUIRED WITHIN STATE OF NEBRASKA

(AS OF 30 SEP 02)

Nebraska Sites	Location	Approx. River Mile	Descending Bank	Total Acquired (ac)
Middle Decatur Bend	Burt County	689 - 686	L	133
TOTAL				133

All Lands Authorized in WRDA99.

WRDA 99 expanded the amount of acres authorized for the Project from 48,100 acres to a new total of 166,750 acres. This is an increase in authorized acreage in the amount of 118,650 acres. During FY02, the Corps of Engineers continued working on completion of a Supplemental Environmental Impact Statement (SEIS). Once completed, the SEIS will define the Preferred Alternative to acquire and develop the additional acreage for the Project.

Work on how the additional acreage will be distributed has begun. The plan proposed in the SEIS is that the acquisition of additional lands for the Project will not reflect a defined amount to be acquired between public or private acres. Also, it is assumed that the additional acres will be acquired proportionally by state based on the amount of riverbank miles. If acquisitions are completed in this manner, the breakdown of the additional acreage by State is displayed in Table 13, below.

TABLE 13
ACQUISITION OF ALL LANDS
TOTAL AUTHORIZED BY WRDA99

State	Riverbank miles	Number of Affected Counties	All Lands Authorized WRDA99 (ac)	Percentage of WRDA99
Missouri	939	25	75,791	64
Kansas	115	4	9,282	8
Iowa	175	6	14,125	12
Nebraska	241	10	19,452	16
TOTAL	1,470	45	118,650	100

Acquisitions against the new authorized acreages will not take place until the SEIS is completed, some time in Spring 2003. Throughout the remainder of the project, the Corps will be working with the Agency Coordination Team to track acquisitions. As the plan changes over the life of the project, the current plan for distribution of the authorized acres as approved by the Agency Coordination Team will be presented annually in future annual reports.

HABITAT DEVELOPMENT (FY02 and Prior)

The intent of this Project is to restore and/or preserve fish and wildlife habitats that were native to the Missouri River floodplain. This, of course, covers an entire array of different habitat types. The Project has completed mitigation of many different habitat types. The variety and implementation of habitats into different areas of the floodplain is part of the development process of the Project. To date, no one species nor one habitat type has been focused upon for restoration. The habitat development has been of an “ecosystem” approach where all habitat types are considered into development decisions.

Restoration and preservation of shallow water aquatic habitat has been accomplished at numerous mitigation sites. This effort has emphasized restoring side channels and chutes and completing within-river improvements. This was accomplished primarily by dike notching, river structure modifications, excavation and dredging. Through 30 Sep 02, shallow water habitats have been created, or work has been started, at 17 mitigation sites.

Reconnecting the floodplain habitats to the river during springtime flood pulses is also a restoration effort that has been emphasized. Several mitigation sites had levees that were close to the river channel. In some cases, the levee was moved landward from the Missouri River. At some locations, such as Overton North, an existing levee was breached in several places to allow high flows to inundate terrestrial habitats and provide valuable organic matter to the river’s water. As of 30 Sep 02, reconnecting floodplain habitats to the river have been completed, or work started, at 5 mitigation sites.

Increasing the amount of wetlands within the Missouri River floodplain is a Project goal. Restoration of migratory waterfowl habitat has been accomplished by construction of low dikes, berms, wells, pumps, water delivery systems, and drainage control structures. Through 30 Sep 02, wetland habitats have been created, or work has been started, at 6 mitigation sites.

Development of terrestrial habitat such as bottomland hardwood and prairie grassland habitats has been a key to the restoration of the ecosystem of the Missouri River. Terrestrial habitats support food plot establishment, nesting cover, insect production, and a whole array of necessary biological functions to keep the ecosystem alive and functioning. Development of terrestrial habitat has been dependent upon the type of existing land use and management objectives. The pre-existing land use at many of the new mitigation sites was agricultural production. The terrestrial habitat development to date has included vegetative plantings and land grading. Through 30 Sep 02, bottomland hardwood and prairie grassland habitats have been developed at 14 and 12 mitigation sites, respectively.

Table 14 displays the different habitat types created at each of the mitigation sites established to date. Following Table 14 is a summary of the habitat development efforts at specific mitigation sites. If a particular site is listed in Table 14 as “Undeveloped”, then a detailed description is not included. Location maps for all of the mitigation sites can be found in Appendix 1.

TABLE 14
HABITAT TYPES DEVELOPED BY SITE
(AS OF 30 SEP 02)

Site Name	SW	FR	W	P	BH	O	U
Berger Bend, MO							X
Columbia Bottom, MO		X					
Corning, MO							X
Deroin Bend, MO	X			X	X		
Eagle Bluffs, MO		X	X				
Grand Pass, MO	X						
Marion Bottoms, MO	X						
Lower Hamburg Bend, MO							X
Nishnabotna, MO							X
Overton Bottoms – North, MO	X	X	X	X	X		
Overton Bottoms – South, MO		X	X		X		
Plowboy Bend, MO	X						
Rochepoint Cave, MO						X	
Rush Bottom Bend, MO							X
Tate Island, MO	X	X			X		
Thurnau, MO							X
Worthwine Island, MO							X
Benedictine Bottoms, KS	X		X	X	X		

SW=Shallow Water, FR=Floodplain Reconnected, W=Wetland, P=Prairie, BH=Bottomland Hardwood, O=Other, U=Undeveloped

TABLE 14 (Continued)

Site Name	SW	FR	W	P	BH	O	U
Auldon Bar, IA							X
Blackbird Bend, IA							X
California Bend, IA	X		X		X		
Copeland Bend, IA							X
Louisville Bend, IA	X			X	X		
Middle Decatur Bend, IA	X			X	X		
Noodleman Island, IA							X
Upper Decatur Bend, IA	X			X	X		
Winnebago Bend, IA	X			X	X		
Hamburg Bend, NE	X		X	X			
Kansas Bend, NE							X
Langdon Bend, NE	X			X	X		
Middle Decatur Bend, NE	X			X	X		
Tieville Bend, NE	X			X	X		
Tobacco Island, NE	X			X	X		
Number of Sites	17	5	6	12	14	1	12

SW=Shallow Water, FR=Floodplain Reconnected, W=Wetland, P=Prairie, BH=Bottomland Hardwood, O=Other, U=Undeveloped

Columbia Bottom, Missouri

This mitigation site is 4,108 acres in size and is located just North of St. Louis at the confluence of the Missouri and Mississippi Rivers, RM 0 - 4. The site is on existing public land owned and operated by the Missouri Department of Conservation (MDC). The land at the Columbia Bottom mitigation site was previously farmed. The area is being improved so that wetlands, native grasses, and bottomland hardwood forest habitats can be restored to the area. Due to the size of the site, the mitigation will occur in several phases.



Columbia Bottom, MO

View looking south at the land now on the riverside of newly constructed levee setback.

Phase I, setback of an 8000 linear foot existing levee, was completed in Summer of 2002. The setback moved the existing levee approx. 800 feet from the Mississippi River bank to create an additional 145 acres of land on the riverside of the levee. In the future, this riverward area will be planted with bottomland hardwood trees and shore area may be evaluated for shallow water habitat potential.

Construction of Phase II, development of approx. 800 acres of wetlands, is currently underway and is scheduled to be complete Spring 2004. Phase II includes construction of 15 low dikes, a pump station, and a water delivery system. Once completed, Phase II will allow development of high quality migratory waterfowl habitat.

Tate Island, Missouri

This mitigation site is located at river miles 110 to 113 on the left descending bank of the river near the Morrison Bend. The site contains 422 acres, but is situated in the middle of the river. Access to the site is limited to boat during most times of the year. The site is located two miles east of Portland, MO. The island is being preserved in it's heavily timbered state. No construction is planned for the site at this time, however opportunities to complete shoreline and/or within river improvements to increase and diversify the shallow water habitat at this site may be undertaken in the future.



Tate Island, MO

Outlet of chute, downstream end of timbered island

Marion Bottoms, Missouri

This mitigation site is located at river mile 158 to 164, on the right descending bank of the river, northwest of Jefferson City. Mitigation at this location was undertaken within the river channel along the banks of the Marion Bottoms Conservation Area, land owned and operated by MDC.

Work at this location consisted of modification to existing river structures so that shallow water habitat could be formed in the river channel. The work was completed in spring 2001.



Marion Bottoms, MO

*USGS aerial photo from Microsoft
Terraserver*



Plowboy Bend, MO

*Diverse and shallow water
habitat created within river by
structure modification*

Plowboy Bend, Missouri

The Plowboy Bend mitigation site is one of several efforts to complete within river structural changes for fish habitat improvements. This site is located adjacent to the Plowboy Bend Conservation Area at river mile 169 to 172 on land which is owned and operated by the MDC.

The work Plowboy included notching an existing dike in several locations and reversing the direction of a second existing dike. The structural modifications were used to direct the natural force of the river against the adjacent riverbank. The eroded riverbank and area within the dike field have created an area of diverse shallow and deep water fish habitat.

Eagle Bluffs, Missouri

This mitigation site is located at river mile 170 to 174 on the left descending bank of the river. The site is on 571 acres of existing public land owned and operated by MDC. The area is bounded by the Missouri River to the west and Perche Creek to the East.



Eagle Bluffs, MO

One of two new wetland cells and backwater areas.

The area had been historically used for row crop production. The mitigation at this site included converting the farmed lands to seasonally flooded wetlands, and reconnecting the floodplain area to the river. Two wetland pools and additional riparian areas were constructed using new levees, berms, and water control structures.

The work also included installation of two "fish friendly" structures specifically designed to allow high flows during the spring to back up into the area to allow fish to spawn within the wetland area and then safely return to the Missouri River. The work at Eagle Bluffs was completed January, 2002.

Overton Bottoms South, Missouri

The Overton Bottoms – South (OBS) site is approximately 3,662 acres in size and is located just to the south of I-70 approximately 15 miles from Columbia, MO. The main project element for the mitigation at the OBS site is setback of an existing agricultural levee. The levee setback creates opportunities on the additional land on the river side of the levee in which future shallow water and/or bottomland hardwood forest habitats can be restored. The borrow area for the construction of the new levee was constructed so as to allow opportunistic wetlands to form. Additionally, the OBS site contains about 500 acres of bottom land forest areas that will be maintained along the river corridor. The construction of the levee setback was completed September, 2002. MDC has assumed operation and management of the area.



Overton Bottoms – South, MO

Opportunistic wetlands forming in borrow areas for new levee.



Rocheport Cave, MO
Biologists at the gated cave entrance

Rocheport Cave, Missouri

This mitigation site is 51 acres in size and is located up a side drainage at river mile 183. The mitigation at this site consisted of completing a cave gating across the entrance to an existing cave. The cave is a summer home to maternal colonies of endangered Gray bats. In the wintertime, the cave also serves as an important hibernaculum.

The gating project prevents human disturbance. The work was completed in July 2002 and has been turned over to MDC for their management.

Overton Bottoms North, Missouri

Overton Bottoms North (OBN) is approximately 1,687 acres in size. It is located at river miles 185 to 189, directly north of I-70 from the Overton Bottoms South site. OBN is made up of formerly farmed lands purchased from private willing sellers by both the Corps of Engineers and US Fish and Wildlife Service (USFWS).

The mitigation at this site included taking the agricultural lands out of production and planting native grasses and trees. In 2000, the Corps designed and constructed a river chute at the OBN site. The 3000 foot long chute is currently 40 feet wide. The chute has created opportunities for new aquatic habitat. The chute was constructed at higher elevations so that it is only inundated on a seasonal basis. The Corps plans to make adjustments to the chute in FY03. Also at OBN, an existing levee was breached. This allows high flows in the spring to spread out over the floodplain and introduce valuable organic nutrients to the river.

OBN has been turned over to the USFWS to manage as part of their Big Muddy Wildlife Refuge system. The USFWS has implemented low maintenance operation plans for the area and plans to let the land recover to pre-agricultural conditions on its own.



Overton Bottoms - North
View looking across habitat area inundated during high spring flows.

Grand Pass, Missouri

This mitigation site is located at the Grand Pass Conservation Area (GPCA) on land owned by MDC. The area is adjacent to the right descending bank of the Missouri River, at river miles 263 to 266.

At this site, the Corps of Engineers constructed shallow water habitat by re-opening a river chute. Restoration of the chute was completed in 1991. The work included modification of existing river structures, excavation and dredging of the chute, installation of submerged brush piles, and construction of rock hard points. The restored chute is now approximately 50 feet wide and has restored 10 acres of high quality shallow water habitat.



Grand Pass, MO

Upstream view of the restored chute



Benedictine Bottoms, KS

Wet prairie habitat during spring high water

Benedictine Bottoms, Kansas

This mitigation site is 2,111 acres in size and is located just north of Atchison, Kansas. The site is at river miles 424 to 429 on the right descending bank at the Rushville Bend of the river.

In 1998, the Corps completed installation of seasonal wetlands, planting of native hardwood trees and prairie grasses, and within river structural changes for shallow water habitat. There is a total of 550 acres of upland hardwood trees, 750 acres of grasslands, and 450 acres of wetlands.

Benedictine Bottoms has been turned over to the Kansas Department of Wildlife and Parks for their management as a wildlife refuge and conservation area. The site is highly utilized by the Biology Department of Benedictine University.

Deroin Bend, Missouri

This mitigation site is located at river mile 516 to 520, on the left descending bank of the river. The site contains 1,082 acres of land belonging to MDC.

At Deroin Bend, the Corps completed restoration of a side channel, planting of several hundred native hardwood trees and cover crop, and connected two existing scour holes to the river. The side channel is approx. three miles long with a 70 foot bottom width. The site has been turned over to MDC for their management as a fish and wildlife area.



Deroin Bend, MO

Inlet to the new side channel



Langdon Bend, NE

Wintertime view of the outlet of the backwater area to the Missouri River

Langdon Bend, Nebraska

The Langdon Bend mitigation site is located at river miles 529 to 532 on the right descending bank near the town of Nemaha, Nebraska. The site consists of 921 acres of formerly farmed lands purchased from willing sellers.

At this site, a 10-foot bottom width pilot channel and backwater area was constructed. The channel is connected to the river at the outlet, but stops before meeting the river at the upstream end. Flow into this area occurs by water from the Missouri River backing up the channel and will allow overland flow at the times when the Missouri River is at high water. This site was completed in 1998 and has been turned over to the Nebraska Game and Parks Commission (NGPC).

Hamburg Bend, Nebraska

The Hamburg Bend mitigation site is located at river miles 552 to 556 on the right descending bank, just south of Nebraska City, Nebraska. The site consists of 1,544 acres of side channels and backwater areas that mimics the historic meander belt of the floodplain. The increase in numbers and variety of fish at this location shows that excellent habitat has been created at this site.

The mitigation at Hamburg Bend was completed in 1996 and has been turned over to the NGPC to be managed as a wildlife area. Additional adjustments to the side channels and river structures are planned for this site.



Hamburg Bend

Aerial view of the meandering floodplain and chutes during high water event in 1997



Tobacco Island, NE

View of the inlet to the restored side channel

Tobacco Island, Nebraska

Tobacco Island is located south of Plattsmouth, Nebraska at river miles 586 to 590 on the right descending bank of the river. The site consists of 1,604 acres of former agricultural land that was purchased from willing sellers by the Corps for the mitigation project.

The mitigation at Tobacco Island included construction of a new side channel and planting native grasses and trees. The mitigation has created additional shallow water aquatic and floodplain habitats. The side channel is three miles long with a 10-foot bottom width and is designed to open up to a wider cross section as the area scours out during high flows.

Construction of the site has just been completed and a dedication ceremony was held on Oct 02.

California Bend, Iowa

The California Bend mitigation site is located across the river from Blair, Nebraska at river miles 649 to 652 on the left descending bank. The site was established on 420 acres of land owned by the Iowa Department of Natural Resources (IDNR).

The mitigation at California Bend included opening a side channel and backwater area. This effort has restored connectivity to the river and created shallow water aquatic habitat. The area is directly connected to the Missouri River and is a fine backwater wetland area for lots of different waterfowl. The improvements have been turned over to be managed by IDNR.



California Bend, IA

Aerial view of the meandering floodplain and backwater areas



Louisville Bend, IA

View of backwater in the restored side channel

Louisville Bend, Iowa

The Louisville Bend mitigation site is 1,096 acres in size. It is located near Onawa, IA at river miles 682 to 685 on the left descending bank. This site was developed on lands owned by IDNR. This site was developed primarily as a wetland and backwater area.

Habitat development at Louisville Bend was completed in 1995. The work included installing controlled openings at the upstream and downstream end of a large side channel area. A pump was installed at the upstream end to pump water into the area as needed. The outflow at the downstream end can be regulated so as to hold water pumped into the area, or allow backwater to flow up into the area during high river stages. A 270 acre area of permanent open water has been created. This area has been turned over to IDNR for their management as a fish and wildlife area.

Tieville-Decatur Bends, Iowa and Nebraska

Mitigation at the Tieville and Decatur Bends of the river are currently being constructed under a single construction contract. The mitigation site is located west of Onawa, Iowa at river miles 686 to 694 on the left descending bank. The area is on lands that lie in both Iowa and Nebraska.

Construction at the Tieville-Decatur Bends site has begun. The planned mitigation will include development of backwater and wetland areas within an old oxbow of the Missouri River. At the upstream end of the site, river pumps will be used to keep the area inundated seasonally. The area will also be allowed to have backwater from the downstream end during periods of high river stages. This area will eventually restore floodplain connectivity to the river and create additional wetland habitat



Tieville-Decatur Bends, IA, NE

Existing oxbow lake area will have permanent water source from either pumps or backwater



Winnebago Bend, IA

View of the restored side channel

Winnebago Bend, Iowa

The Winnebago Bend mitigation site is located just south of Sioux City, Iowa at river miles 708 to 713 on the left descending bank. The site was established on 1,300 acres of land owned by the Corps of Engineers.

Using Project funds, habitat development at the Winnebago Bend site was completed in 2001. The mitigation features a reopened side channel with control structures at the inlet, outlet and middle of the site. At the upstream end of the site, river pumps are used to keep the area inundated seasonally for waterfowl. The area is also allowed to have backwater move up from the downstream

end during periods of high river stages. This area has been turned over to IDNR for their management as a fish and wildlife area.

OPERATION AND MAINTENANCE (FY02 and Prior)

There are two types of Operation and Maintenance (O&M) activities for this Project. The first is “O&M During Construction”. O&M During Construction takes place at sites that have not yet had habitat developed on them, yet require O&M activities such as weed control to be performed. Typically, these sites are either waiting for funds to be constructed, or additional lands to be acquired prior to habitat development. There are currently nine sites under O&M During Construction, but this number goes up or down.

Funding for sites which require O&M During Construction is made with Construction, General (CG) type funds and are accounted for against Project funding. The work is usually performed by contract or by the agency that is interested in managing the site once habitat development has occurred. If funds are needed by an agency other than the Corps of Engineers for O&M During Construction, the funds are requested and approved from the Corps on an annual basis via an Annual Management Plan process. Requests are usually made in the summer for work planned for the following fiscal year (Oct through Sep).

The second type of O&M is straight Operation and Maintenance. Sites are considered to be in an O&M phase once constructed features have been completed and are accepted as complete by all parties. Sites can also be considered in an O&M phase when areas have been planted and are in a healthy growing condition. The constructed features and habitat lands must be operated and maintained to assure that maximum habitat value is achieved. Therefore, O&M funds are provided for this purpose. O&M type funds are not a part of CG funding and do not count against the Project costs.

On a typical site, O&M requirements are estimated initially during the design phase. An O&M manual is then developed during the construction phase with the party responsible for administering the O&M at the particular site. An O&M manual will define the entity that will do the maintenance, the degree of Corps responsibility, schedule and procedure requirements, monitoring, etc. After construction of features or habitats at a site, a cooperative agreement will be executed between the Corps and the party responsible for administering the O&M. The cooperative agreement will document the O&M responsibilities. If funds are needed by an agency other than the Corps of Engineers for O&M, the funds are requested and approved from the Corps on an annual basis via an Annual Management Plan process.

To date, the Corps has funded 100 percent of the O&M of the mitigation features and habitat lands developed under this project, whether the sites are in O&M During Construction or straight O&M status. The funding of O&M at 100% Federal cost will continue for the life of the Project. For mitigation that has occurred on properties not owned by the Corps, O&M will only be conducted on those portions of the property in which mitigation occurred and only for those features that were constructed by the Project. In most instances, the funds are forwarded to the landowner for the work to be accomplished by their existing work force.

As of 30 Sep 02, there were thirty mitigation sites that have been established. Six of these sites have not had any O&M performed on them to date. There are nine sites that are undergoing land management using O&M During Construction funds. Also, there are fifteen sites which have had habitat developed or preserved and are now considered to be in an O&M phase. The status of the O&M of all mitigation sites is described in Table 15.

TABLE 15
STATUS OF OPERATION AND MAINTENANCE FOR
MITIGATION SITES
(FY02 and Prior)

Site	Current Funding	Description of O&M	Responsible Party
Berger Bend, MO	--	None (habitat preservation, weed control, food plots through ag-lease)	COE
Columbia Bottom, MO	--	None (to be started in FY04)	COE
Corning, MO	CG	Basic land management, weed control	MDC
Deroin Bend, MO	O&M	Management and surveillance of the constructed chute and tree plantings, access road improvements	MDC
Eagle Bluffs, MO	O&M	Management of wetland pool elevations, water control structures, weed control, mowing, food plots	MDC
Grand Pass, MO	O&M	Management and surveillance of the constructed chute (no cost to date due to ag leasing program)	MDC
Marion Bottoms, MO	O&M	Monitoring dike notching	COE
Lower Hamburg, MO	CG	Land management, tree planting, existing habitat preservation	MDC
Nishnabotna, MO	CG	Land management, existing habitat preservation	MDC

TABLE 15 Continued

Site	Current Funding	Description of O&M	Responsible Party
Overton Bottoms North, MO	CG	Native grass and tree plantings, weed control, surveillance of constructed chute, signage	USFWS
Overton Bottoms South, MO	CG	Basic land management and monitoring	MDC
Plowboy Bend, MO	O&M	Monitoring dike notching	COE
Rocheport Cave, MO	O&M	Monitoring, debris removal	MDC
Rush Bottom Bend, MO	CG	Land management, weed control	MDC
Tate Island, MO	O&M	Habitat preservation, signage	MDC
Thurnau, MO	CG	Land management, weed control	MDC
Worthwine Island, MO	--	None (to be started FY04)	MDC
Benedictine Bottoms, KS	O&M	Wetland management, infiltration control, tree planting, weed control	KDWP
Auldor Bar, IA	CG	Land management and habitat preservation	IDNR
Blackbird Bend, IA	--	None (to be started in FY04)	COE
California Bend, IA	O&M	Maintain all structures, fences, signs and roadways. Land management and habitat preservation.	IDNR
Copeland Bend, IA	CG	Land management and habitat preservation.	IDNR

TABLE 15 Continued

Site	Current Funding	Description of O&M	Responsible Party
Louisville Bend, IA	O&M	Maintain all structures, fences, signs and roadways. Provide law enforcement. Land management and habitat preservation. Pump maintenance.	IDNR
Noodleman Island, IA	CG	Land management and habitat preservation.	IDNR
Winnebago Bend, IA	O&M	Maintain all structures, fences, signs and roadways. Land management and habitat preservation. Pump maintenance.	IDNR
Tieville-Decatur Bends, IA - NE	--	None (to be started in FY04)	COE
Hamburg Bend, NE	O&M	Maintain all structures, fences, signs and roadways. Land management and habitat preservation.	NGPC
Kansas Bend, NE	--	None (to be started in FY05)	COE
Langdon Bend, NE	O&M	Maintain all structures, fences, signs and roadways. Land management and habitat preservation.	COE
Tobacco Island, NE	O&M	None (to be started in FY03)	COE

CG = Construction General Funding, O&M = O&M Funding, COE = Corps of Engineers, MDC = Missouri Department of Conservation, KDWP = Kansas Department of Wildlife and Parks, IDNR = Iowa Department of Natural Resources, NGPC = Nebraska Game and Parks Commission.

MONITORING AND EVALUATION (FY02 and Prior)

Because many of the mitigation features of this project will be constructed as opposed to created naturally over time, it is important to complete monitoring and evaluation (M&E). By monitoring the mitigation sites and collecting basic habitat data, the Agency Coordination Team can determine whether the mitigation sites are performing as expected.

Typically, during the design phase, specific goals and objectives are determined for each site and monitoring criteria for meeting these objectives are established. After construction, M&E will be conducted on the various aspects of each site in order to assess the degree of success of the habitat development. M&E will be performed by utilizing teams with representatives from the Agency Coordination Team, the USGS, contractors, and academic institutions. Monitoring results will be collected at some sites on an annual basis and at others at a less frequent interval, depending on the objectives of the specific site. Project performance will be reported in future Annual Implementation Reports.

As of 30 Sep 02, the only funds provided for this project were based upon the WRDA86 authorized 48,100 acres. A minimal amount, approx. \$300,000 was included for M&E efforts. The M&E was envisioned to be a very low cost effort of annual inspection with no efforts to complete research efforts.

To that end, periodic and/or annual inspections have been conducted at the mitigation sites that have been placed in an O&M phase. Some site specific data has been collected. This includes a three-year fisheries study performed under contract with the State of Nebraska, limited funding of efforts at Benedictine Bottoms through the Benedictine University, pallid sturgeon micro model studies with the St. Louis District, and USFWS studies on songbirds and turtles at the Overton North site.

**CURRENT MITIGATION EFFORTS
FY03**

FUNDING (FY03)

As of the writing of this Annual Implementation Report, a Federal budget for the project has not been approved. The Federal government has started FY03 operating under a continuing resolution authority. Therefore, the FY03 budget for the project is uncertain. The following information assumes that the FY03 budget for the project will be the same as what is in the “President’s Budget” which is \$17.5 million for this fiscal year. Based upon this assumed budget amount, a breakdown of the FY03 funding is presented in Table 16.

**TABLE 16
BREAKDOWN OF ESTIMATED FUNDING FOR FY03**

Task	CENWK (1,000)	CENWO (1,000)	TOTAL (1,000)
Land Acquisition	\$2,725	\$2,230	\$4,955
Planning, Engineering, and Design	1,800	600	2,400
Habitat Development	3,800	4,500	8,300
Construction Management	250	270	520
O&M During Construction	350	100	450
Monitoring and Evaluation	575	300	875
TOTAL	\$9,500	\$8,000	\$17,500

REAL ESTATE (FY03)

As of September 30, 2002, there remains a total of 4,723 acres of non-public lands and 6,045 acres of existing public lands authorized under WRDA86. Also, during FY03 it is anticipated that the SEIS will be completed for the additional acres authorized by WRDA99. Once the Record of Decision for the SEIS is signed, the authorized amount of land remaining to be purchased is going to exceed 129,000 acres. These acres will be available in all four states and real estate efforts will be of primary interest during FY03.

During FY03, the Corps will undertake several efforts to purchase additional land from non-public owners. Willing seller efforts will take place in Iowa, Kansas, and Nebraska. Current ownership information will be updated and many landowners will be contacted to see if they are willing to sell their property. An amount of \$4,955,000 is estimated to be available in FY03 for real estate activities (pending appropriation by Congress).

In Missouri, focused efforts will be placed on the Church Farms property near Jefferson City. If this acquisition falls through, then additional lands will be sought in Ray County, MO. Additional acquisitions adjacent to the existing sites at Berger Bend, Corning, Nishnabotna, and Lower Hamburg sites will be pursued. Additionally, the Corps will be seeking to obtain Federal prison farm land on the Missouri side of the river opposite Leavenworth, KS. The Corps will also be seeking to obtain more easements on existing public property at Columbia Bottom and Thurnau sites.

In Kansas, a willing seller effort will be undertaken on several locations in Doniphan and Atchison Counties. The Corps will continue to work with the Kansas Department of Wildlife and Parks and the USFWS to prioritize lands. Additional opportunities to expand the area at Benedictine Bottoms will be included.

In Iowa, additional non-public lands are being sought at Copeland Bend. The Corps will be working with NRCS and IDNR at this location. Additional efforts will be undertaken at Auldon Bar, Noddleman, and Blackbird Bends.

In Nebraska, the Corps will be attempting additional acquisitions at Hamburg Bend, Langdon Bend, Kansas Bend, and Tobacco Island. The Corps will also pursue real estate agreements with the Omaha Tribe at Hole in the Rock and the Winnebago Tribe at Glovers Point to complete projects on their lands.

HABITAT DEVELOPMENT (FY03)

In FY03, an amount of \$11,220,000 is estimated to be available for habitat development (pending appropriation by Congress). This includes \$2,400,000 for engineering and management activities and \$8,820,000 for construction. The following is a summary of habitat development activities to be completed by site, if Congress appropriates full funding for FY03.

Columbia Bottom, MO – Phase II construction to install water management system for wetlands will continue. The plans and specifications for installation of one or more river pumps will be completed in FY03. Pending receipt of FY03 funding, a construction contract for installation of the river pump(s) will be awarded in Spring 03 with the construction extending into FY04.

Berger Bend, MO – Funding in FY03 will be used to begin habitat improvements at this site. A habitat development plan will be completed with MDC and USFWS. The installation of hardwood trees and planting of a cover crop will be completed as much as possible through an agricultural lease of the property over a three year planting cycle. Goal is to turn the property over to MDC by Dec 05.

Overton Bottoms South, MO – A construction contract to set back an existing levee at this site was awarded in FY01 and will be completed in FY03. The set back will be made operational this year and turned over to the Overton-Woolridge levee district for O&M beginning in FY03. Also at this site, the Corps of Engineers will continue efforts to fund and construct a maintenance building including site improvements and fencing. The boundary of this mitigation site will be surveyed and marked in FY03.

Overton Bottoms North, MO – The Corps will continue to work on the chute at this site. Deeping the chute to accommodate shallow water habitat will be completed as funding and weather permit during FY03. A new inlet will be constructed so as to improve debris flow through the chute. The boundary of this mitigation site will be surveyed and marked in FY03.

Benedictine Bottoms, KS – During FY03, the Corps will be working with KDWP to improve the water holding at the wetlands at this site. This will be accomplished by blending soda ash with the natural soil and compacting the mixture in place at the wetland areas. Also, additional trees will be planted at this location to augment the trees already there.

Worthwine Island, MO – The design to re-open a chute at this site will continue. Plans and specifications will be completed during FY03. Depending on available funds, a construction contract for this project may be awarded very late in FY03. The current working estimate for the project is \$3.5M.

Langdon Bend, NE – The plans for the improved access road and parking area are complete. However, an additional easement across private land is necessary prior to installation. If negotiation of the easement is successful, this project will be completed as funding and weather permit during FY03.

Kansas Bend, NE – Plans and specifications for installation of a side channel at this mitigation site will be completed in FY03. A construction contract will be advertised and awarded pending receipt of FY03 funds. The construction will extend into FY04.

Lower Hamburg, MO - Plans and Specifications for construction of a chute at this site will be updated to reflect lessons learned from the Overton and Derooin Bend chutes. Pending receipt of FY03 funding, a construction contract will be awarded in Spring 03. The construction of the project is will continue into FY04. The current working estimate for the project is \$3.5M.

Hamburg Bend, NE – The Corps will be undertaking additional improvements along the river at this site during FY03. Existing river structures will be modified and some new dikes may be installed to establish additional shallow water habitat and floodplain connectivity.

Copeland Bend, IA – Acquisition at this site is not complete. However, on the lands already owned, the Corps and IDNR will continue to work at creation of depressional wetlands through excavation of material. The completion of proper environmental documentation and awarding of a contract will be completed in FY03.

Noodleman Island, IA – Acquisition at this site is not complete. However, on the lands already owned, the Corps and IDNR will continue to work at creation of depressional wetlands through excavation of material. The completion of proper environmental documentation and awarding of a contract will be completed in FY03.

Louisville Bend, IA – During FY03, the Corps will award a construction contract to modify the inlet structure and build a dike across the middle of the site to improve control of flows through the area.

Tieville-Decatur Bends, IA and NE – A construction contract to install backwater and side channel areas at this site was awarded in FY02. This construction is continuing through FY03. Depending on receipt of funds and weather, this project is scheduled to be completed in early FY04.

Shallow Water Habitat, IA, NE, KS, MO – A construction contract to modify existing river structures will be awarded during FY03. Work started during FY02 using O&M funds will be funded during FY03 using mitigation project funds. These type of river structure modifications are anticipated to continue for many years.

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (FY03)

An Environmental Impact Statement for the Fish and Wildlife Mitigation project was filed with US EPA on December 23, 1982. This effort was completed for the original 48,100 acres authorized under WRDA86. In the Water Resources Development Act of 1999, the Missouri River Fish and Wildlife Mitigation Project was reauthorized to include an additional 118,650 acres of land to be purchased from willing sellers on which to develop, restore or enhance fish and wildlife mitigation sites. A Supplemental Environmental Impact Statement (SEIS) will be completed prior to project purchase or habitat development on the additional acres.

The SEIS process was started in August 2001 and will continue during FY03. The public involvement and review of the draft document will take place during October 2002. The Final SEIS will be available for public review starting in February, 2003. As with the Draft document, a pre-final SEIS document will be produced for Agency Coordination Team review prior to issuing the final document for public comment. The Record of Decision document will be completed by March, 2003. The Corps of Engineers is utilizing an AE firm to complete the SEIS effort.

OPERATION AND MAINTENANCE (FY03)

In FY03, an amount of \$450,000 of Construction, General (CG) funds is estimated to be available for O&M During Construction (pending appropriation by Congress). If Congress appropriates full funding for FY03, the following is a summary of how the CG funds will be spent.

At sites that have not been placed in an O&M status, O&M During Construction funds will be provided for basic land management, habitat preservation, tree plantings, weed control, and signage. This will occur at the following mitigation sites: Berger Bend, MO; Overton Bottoms South, MO; Overton Bottoms North, MO; Rush Bottom Bend, MO; Thurnau, MO; Corning, MO; Nishnabotna, MO; Lower Hamburg, MO; Auldon Bar, IA; Copeland Bend, IA; Auldon Bar, IA; and Noddleman Island, IA.

For those sites that have been placed in an "Operations" status, CG funds will not be used. The Corps must provide O&M type funds for these mitigation sites and the funding for this does not get counted toward overall project costs. The types of work that this would include is maintaining constructed structures, pumps, fences, signs and roadways. Also covered are land management activities such as habitat preservation, wetland and infiltration control, habitat preservation, tree planting, and weed control. O&M will continue during FY03 at the following mitigation sites: Tate Island, MO; Marion Bottoms, MO; Plowboy Bend, MO; Eagle Bluffs, MO; Rocheport Cave, MO; Grand Pass, MO; Benedictine Bottoms, KS; Deroin Bend, MO; Langdon Bend, NE; Hamburg Bend, NE; Tobacco Island, NE; California Bend, IA; Louisville Bend, IA; and Winnebago Bend, IA.

MONITORING AND EVALUATION (FY03)

In FY03, an amount of \$875,000 of Construction, General (CG) funds is estimated to be available for Monitoring and Evaluation (M&E) (pending appropriation by Congress). If Congress appropriates full funding for FY03, M&E funds will be spent on periodic and/or annual inspections at the mitigation sites that have been placed in an Operation phase. Some site specific data will be collected to support baseline conditions for shallow water habitat. Participation with MDC on conducting a public use survey will be started. USFWS studies on song birds, turtles, and native fish will be funded at the Overton North site. Additionally, an M&E plan for the project will be drafted for review and acceptance by the Agency Coordination Team.

FUTURE MITIGATION EFFORTS FY04 TO COMPLETION

FUNDING (FY04 to completion)

In FY2001, the Corps of Engineers worked with the Agency Coordination Team to develop a Cost Report to Congress. The Cost Report gave a cost estimate of the amount of funds needed to complete mitigation of the additional 118,650 acres authorized by WRDA99. The cost to complete the project was estimated to be \$740 million (includes 7,000 acres of shallow water habitat) to \$1.33 billion dollars (includes 20,000 acres of shallow water habitat). These costs were at October, 2001 price levels. The Corps is currently creating budgets based upon the \$1.33 billion in anticipation that pressures from resource agencies will continue to focus mitigation efforts on shallow water habitat. Note that all future work is subject to annual appropriation. The life of the project is currently projected to last until the year 2042.

REAL ESTATE (FY04 to completion)

At the conclusion of FY03, the SEIS process will be completed and the amount of non-public and existing public lands authorized for the project will be in excess of 120,000 acres. Authority to purchase additional lands will be available in all four states. It is hoped that the concerted effort to inform the public of the project and the update of the willing seller surveys that take place during FY03 may produce additional willing sellers. Also, during FY04 and beyond, the Corps will continue to work with the Agency Coordination Team to identify existing public in which mitigation projects can be implemented.

As willing sellers, both private and public, come forward, acquisitions of their properties will be of top priority. Real estate acquisitions will take priority over awarding all construction contracts for habitat development. If funds are provided, it is estimated that the acquisition effort will last for at least 20 years before enough willing sellers are found.

HABITAT DEVELOPMENT (FY04 to completion)

If funds are provided in FY04, the habitat development that had been started in FY03 will continue to completion. This will be at the Columbia Bottom, MO; Kansas Bend, NE; Lower Hamburg Bend, MO; and Tieville-Decatur Bends, IA & NE mitigation sites. The Corps will

continue to adaptively manage the constructed chute at Overton Bottoms North. Additionally, it is anticipated that funds will be provided to begin habitat development at the Worthwine Island, MO mitigation site.

For all future years, if funds are provided, continued modifications to the river structures will be a priority for habitat development. Additional opportunities for reconnecting the floodplain with the river will be undertaken at all possible locations. Set back and breaching of existing levees will be undertaken. Vegetative plantings and other land management practices will also continue.

OPERATION AND MAINTENANCE (FY04 to completion)

If funds are provided in FY04 to completion of the project, the Corps of Engineers will be establishing many new mitigation sites. As is current practice, the States will be asked to provide annual management plans in order to receive Federal funds for maintenance of constructed features of this project. O&M of the mitigation sites will remain 100% Federal funded.

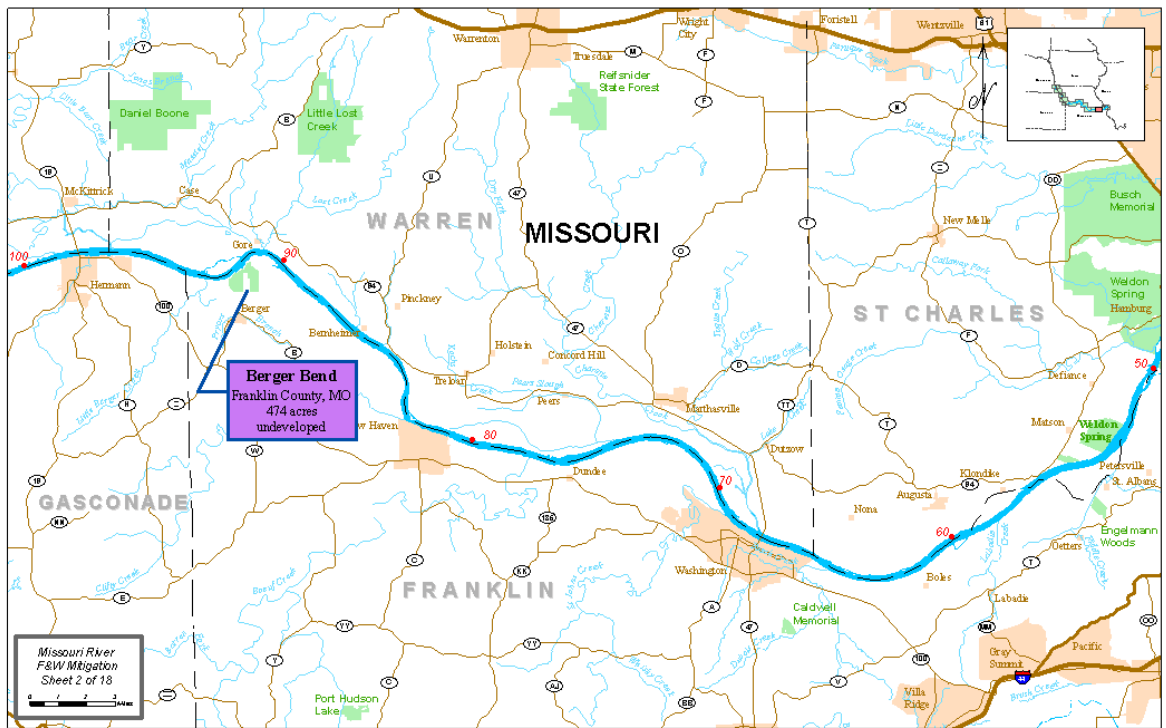
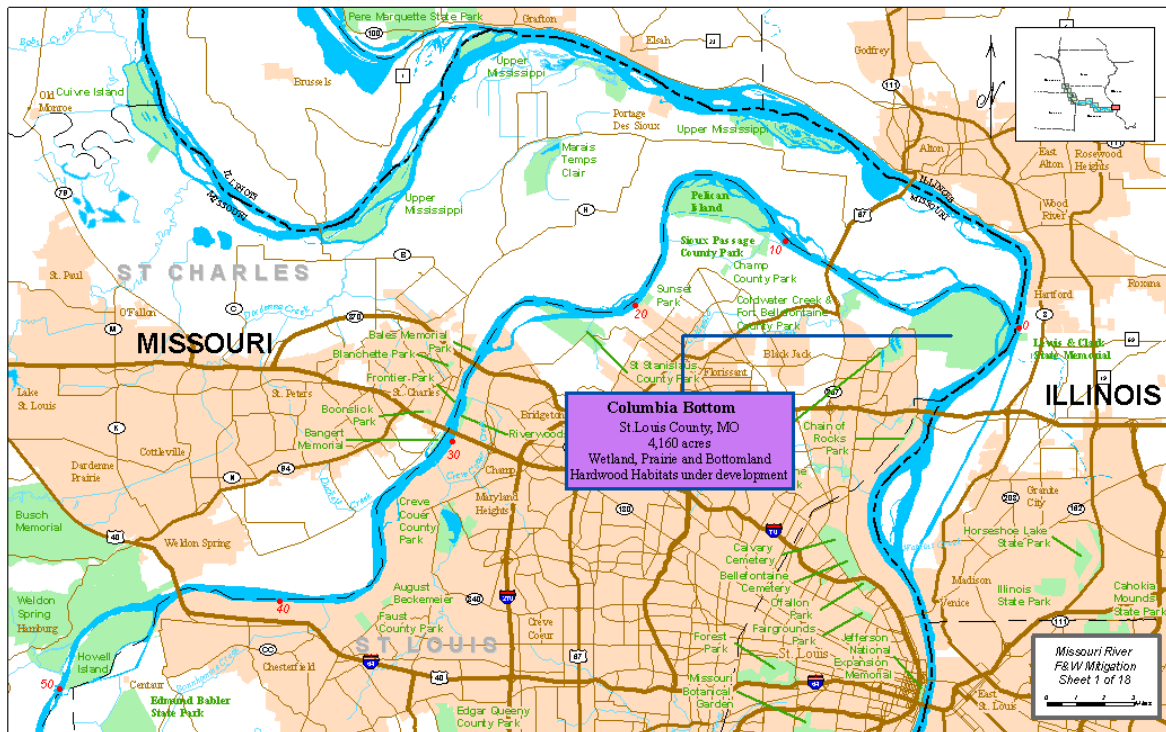
It was estimated in the Cost Report to Congress that the O&M requirements would incrementally increase over time to reach an amount estimated to be \$5 million per year by the time the project was fully constructed. This amount was estimated based on only passive, self sustaining habitat areas being constructed by this project.

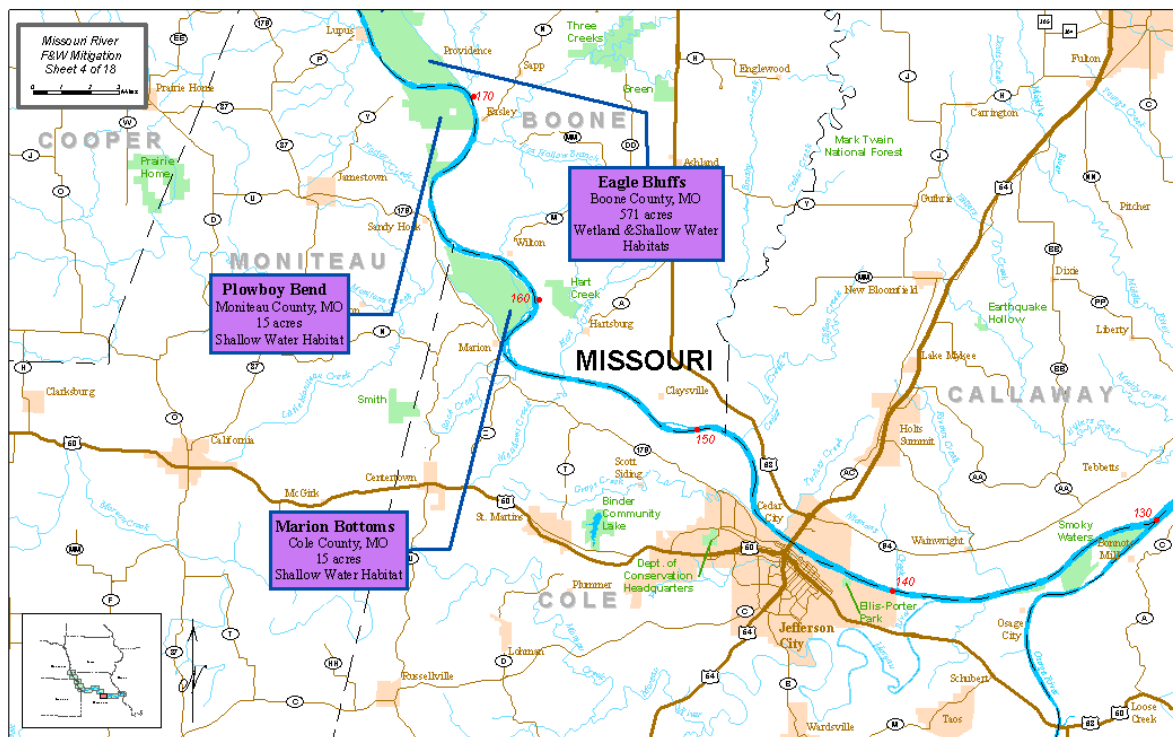
MONITORING AND EVALUATION (FY04 to completion)

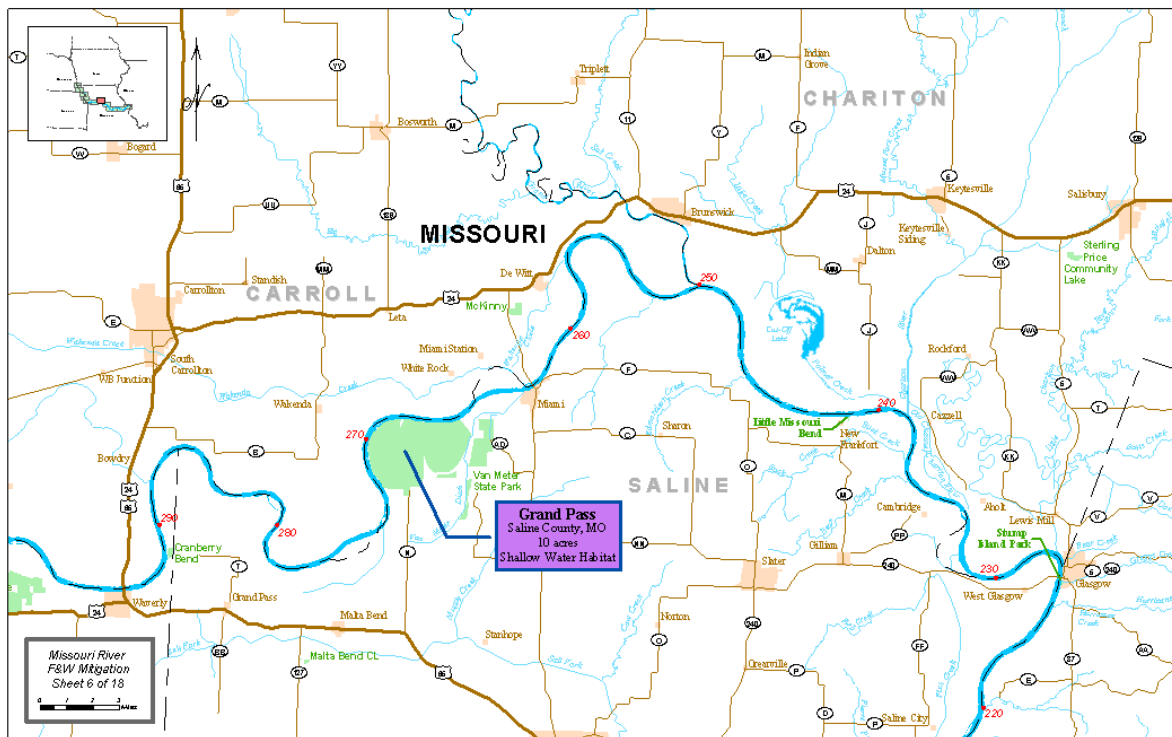
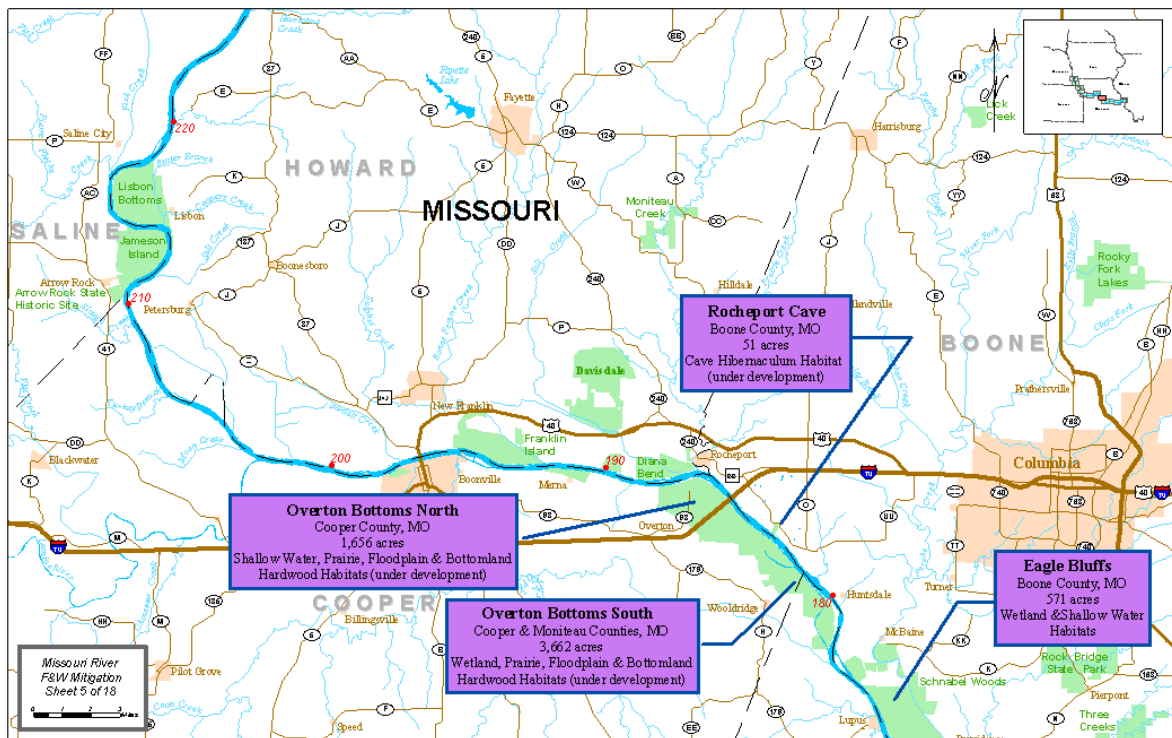
It is anticipated that the SEIS will call for a detailed Monitoring and Evaluation (M&E) effort to be funded by the mitigation project. The M&E effort will be used to support adaptive management of established mitigation sites. Participation of the Agency Coordination Team is considered essential to understanding and agreeing upon adaptive management needed to keep established mitigation sites healthy and productive.

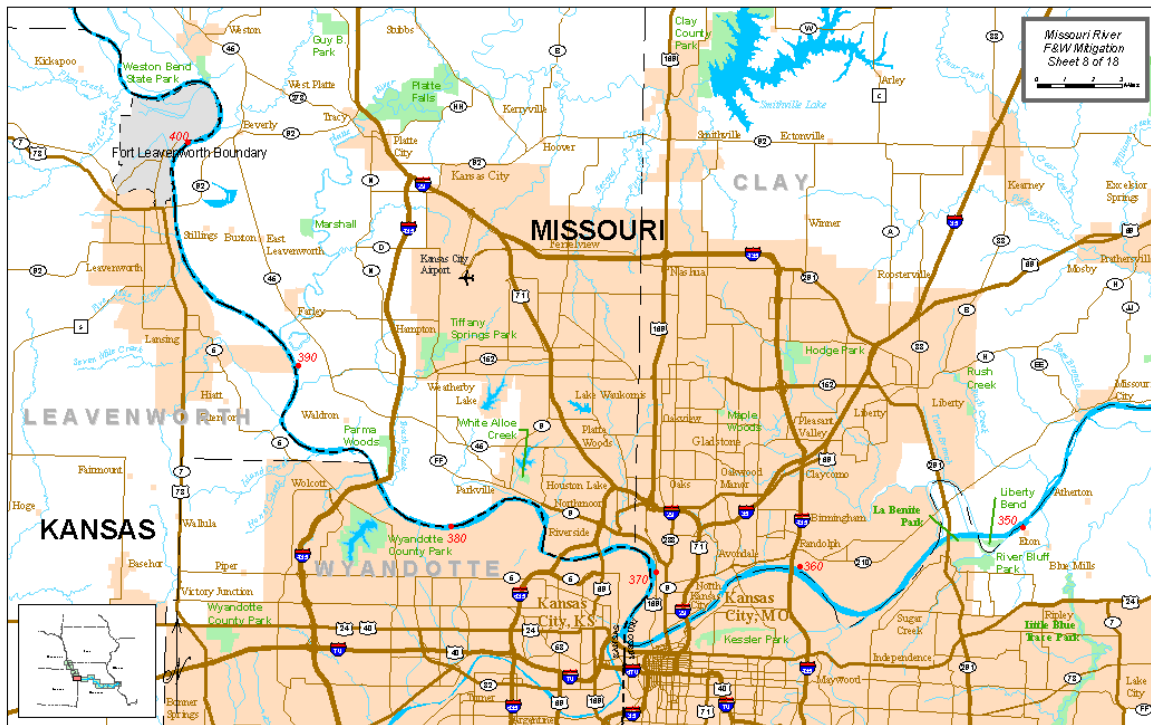
If funds are provided in FY04 to completion, M&E efforts will be based on the entire Missouri River floodplain ecosystem. No one species will be concentrated upon. Rather, a holistic approach must be taken to assure the form and function of the river is restored. It was estimated in the Cost Report to Congress that an amount of 5% of each annual appropriation will be budgeted for M&E activities.

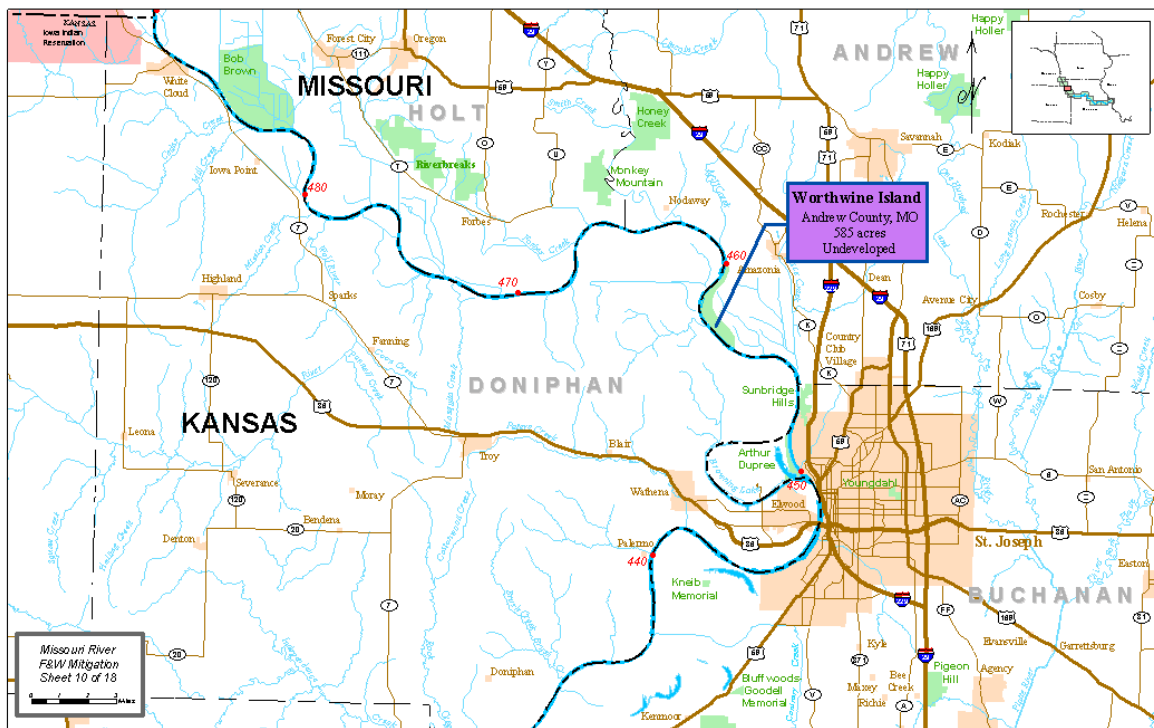
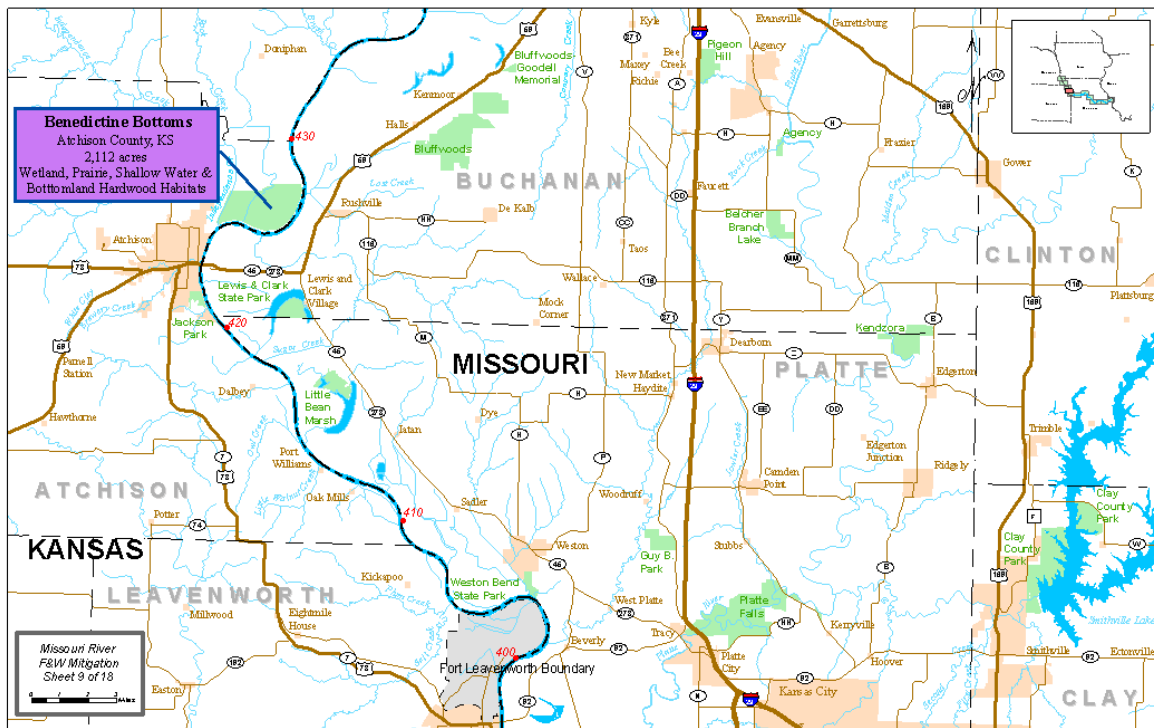
APPENDIX 1
SITE LOCATION MAPS

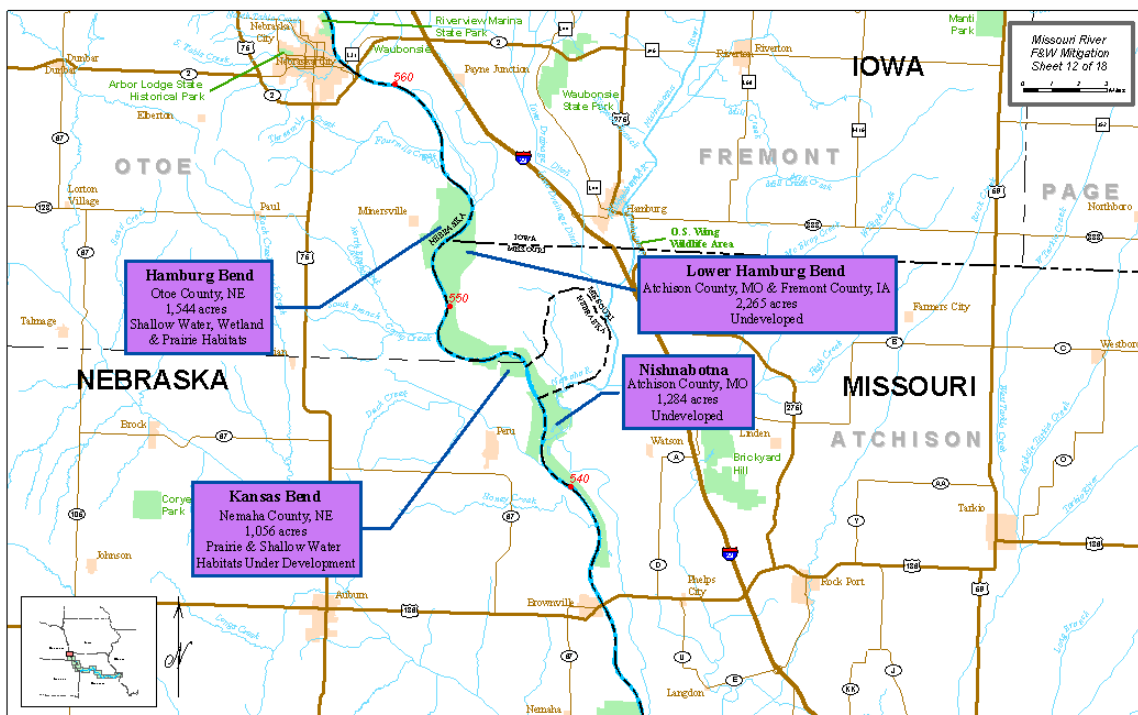
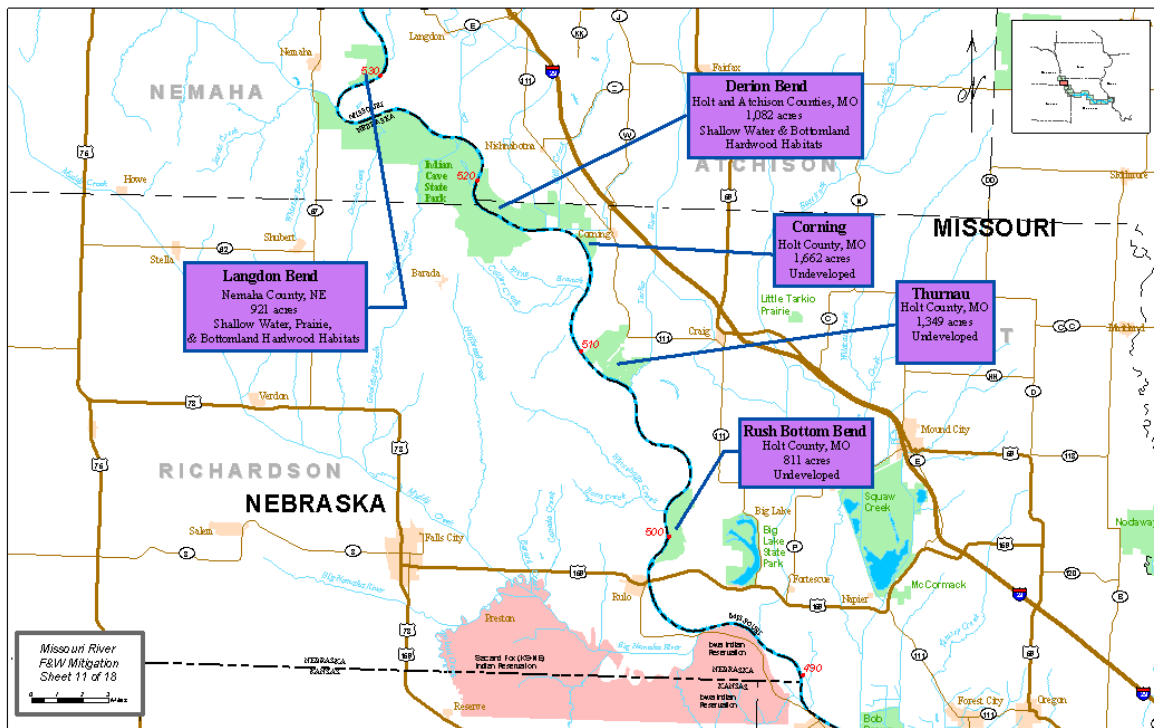


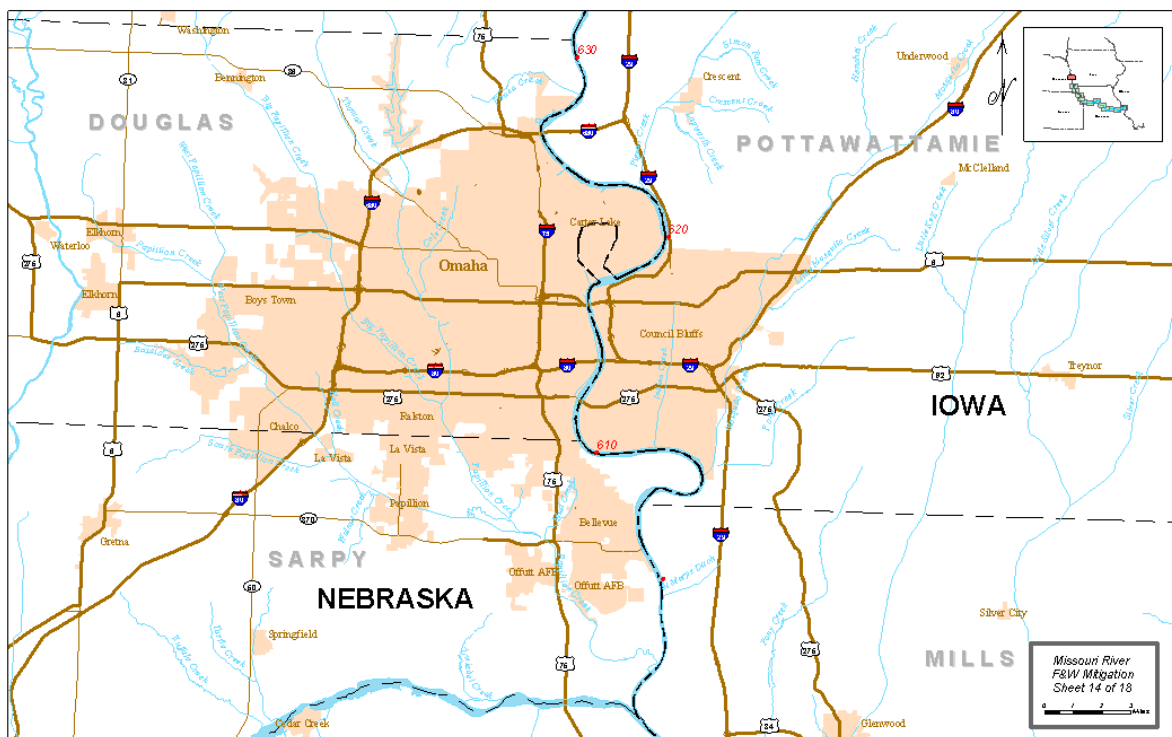
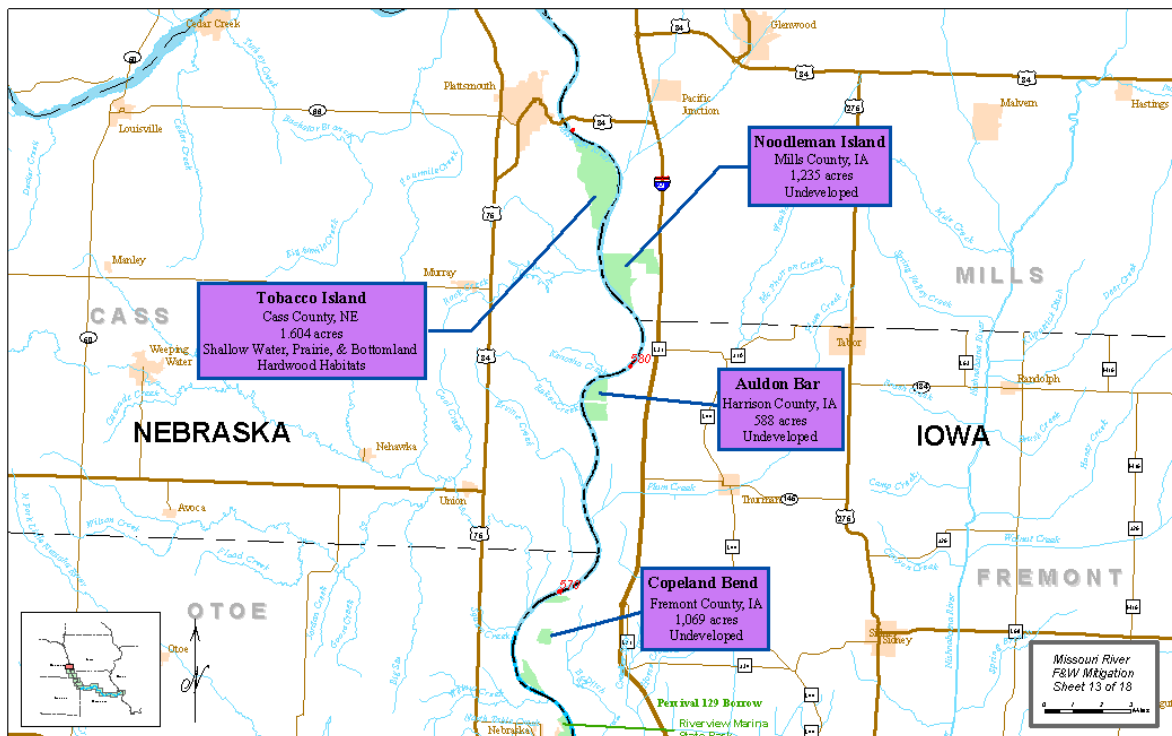


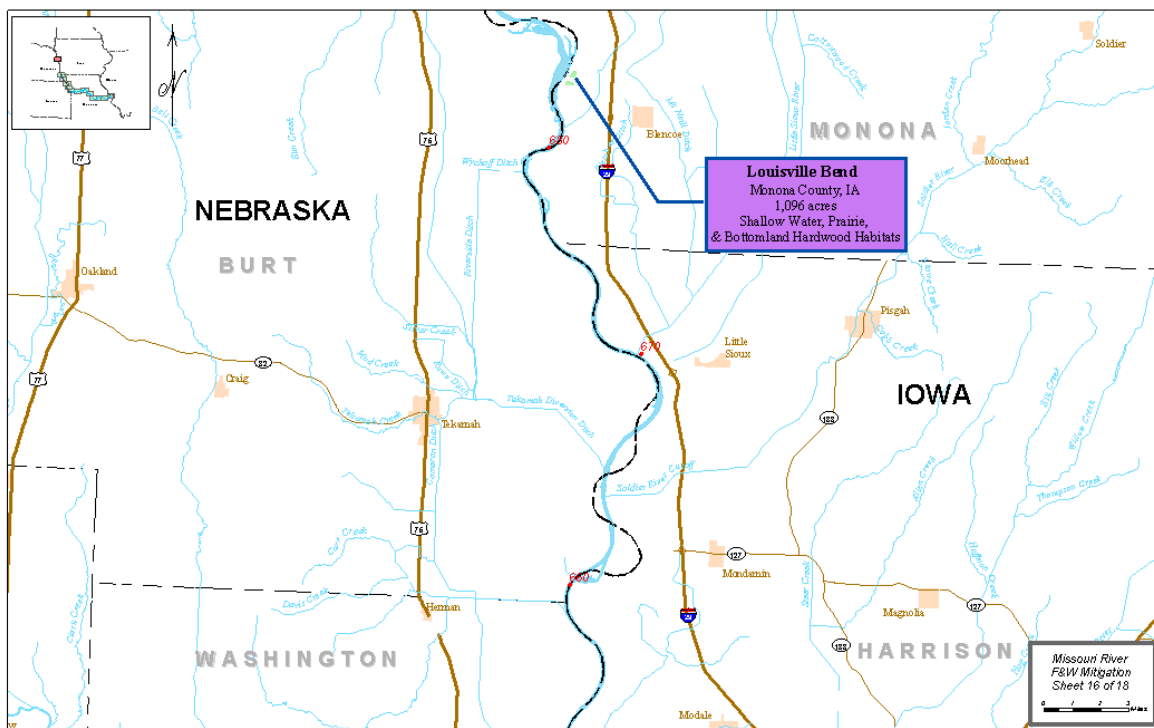
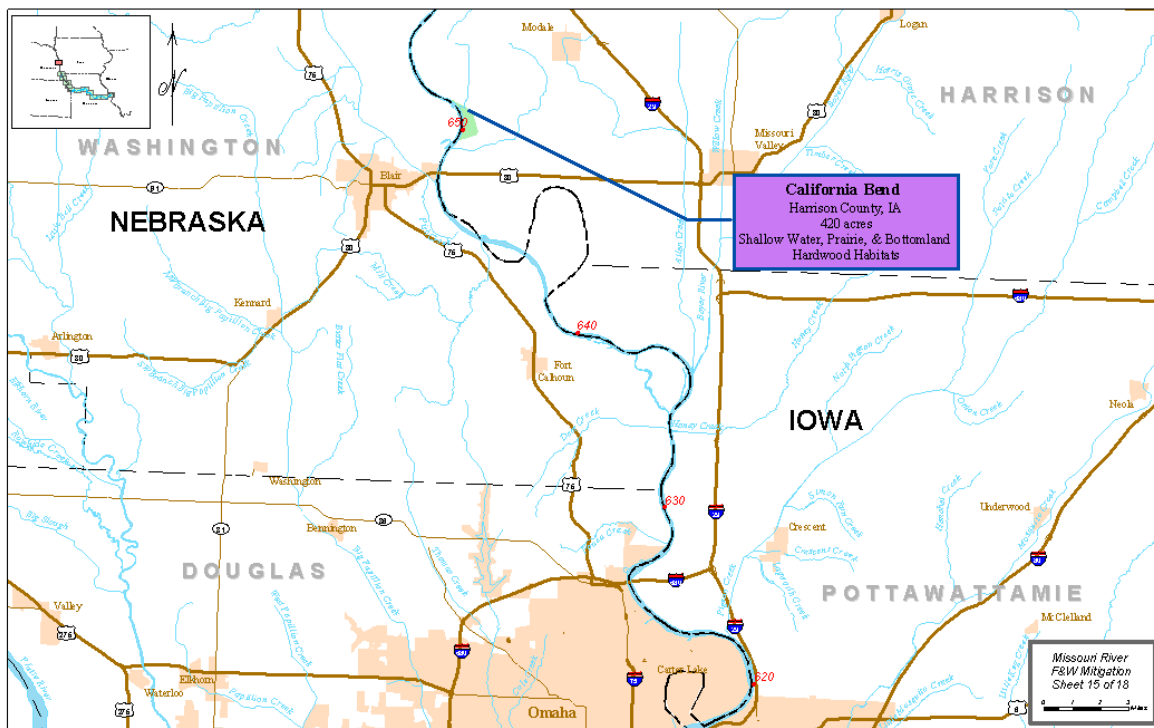


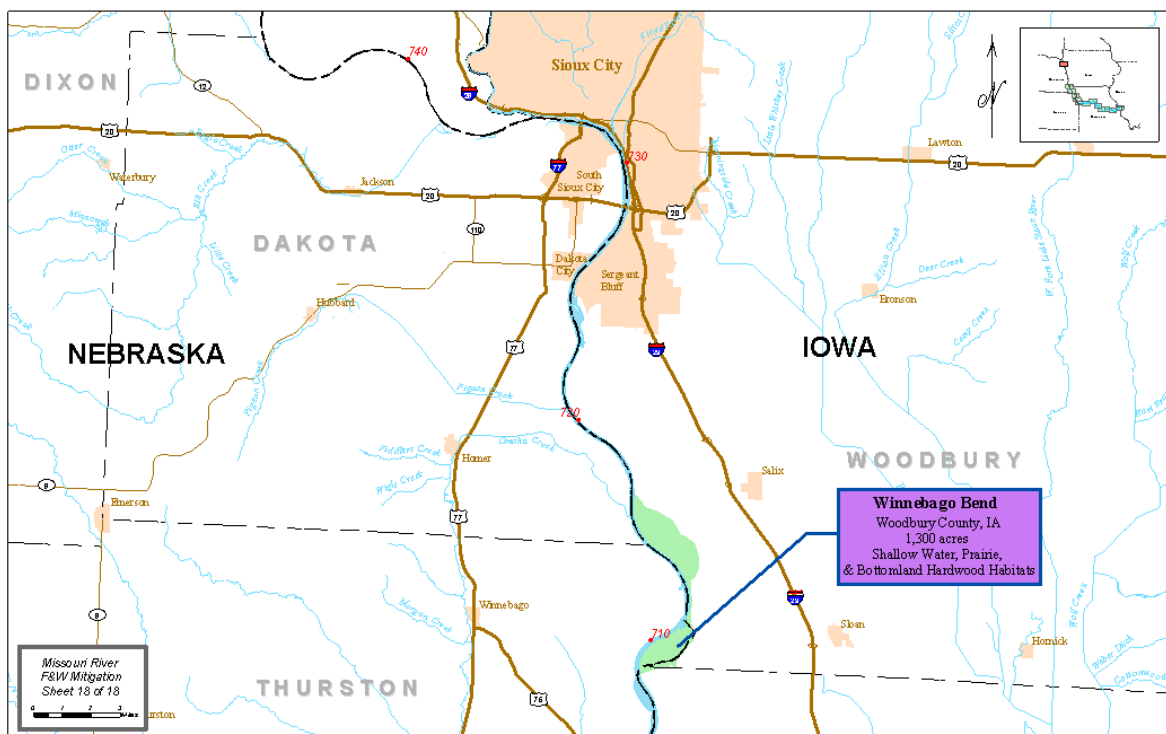
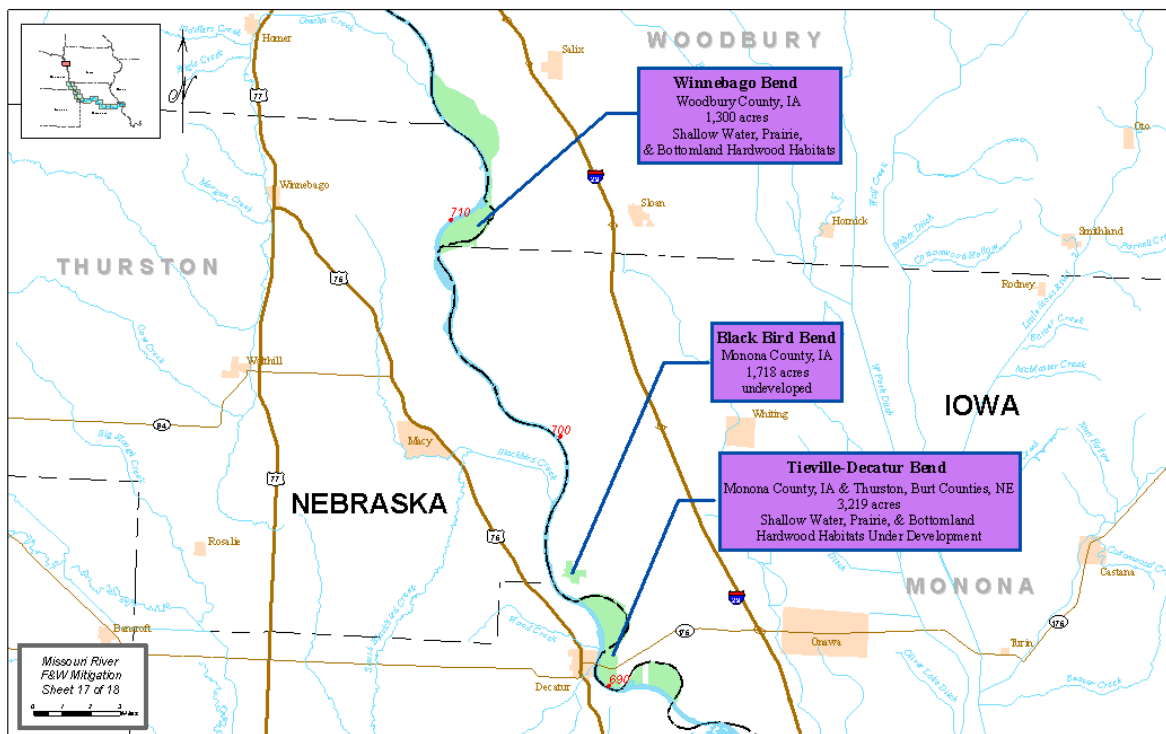














**US Army Corps
of Engineers** ®

**US Army Corps of Engineers
Kansas City District
601 East 12th Street
Kansas City, Missouri 64106
816-983-3324, Fax: 816-426-6356**
